

What is claimed is:

- [illegible]

7. The method of claim 1 wherein said method is performed at the edge of a network.

5 8. The method of claim 1 wherein said method is performed at an intermediate node within a network.

9. The method of claim 8 wherein an intermediate node performs one or more functions selected from reconstruction,
10 deconstruction, or a combination of deconstruction and reconstruction.

10. The method of claim 1 wherein said selecting step further comprises:

15 separating the video image sequence into a plurality of components; and

selecting a plurality of dimensions to encode each of components in the plurality of components, where each dimension represents a characteristic of a video image
20 sequence.

11. The method of claim 10 wherein, after encoding, each of said components are represented by a base bitstream and at least one additional bitstream.

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12. The method of claim 10 wherein said dimensions are orthogonal.

13. The method of claim 10 wherein said selecting step is
30 performed at the edge of a network.

14. The method of claim 1 wherein said base bitstream represents a video sequence having minimal quality.

35 15. The method of claim 14 wherein said at least one additional bitstream, when combined with said base bitstream, represents a video sequence having a quality that is higher than said base bitstream.

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23. The method of claim 16, wherein the network comprises at least one transition node, where each transition node performs a method comprising:

5 selecting said base bitstream and at least one of said additional bitstreams for further propagation through a network that is coupled to said at least one transition node.

24. The method of claim 23 wherein said further propagation is through a second network comprising nodes that perform a method comprising:

10 selecting said base bitstream and at least one of said additional bitstreams, wherein said selection is performed in response to a capability of a user device that is coupled to said node in said second network;

15 combining said base bitstream and said at least one additional bitstream to form a combined bitstream; and propagating said combined bitstream to the user device.

20 25. Apparatus for producing deconstructed video comprising: a video component extractor for extracting at least one second image sequence from a first image sequence, where said at least one second image sequence represents a component of said first video image sequence;

25 an encoding dimension selector for selecting a number of dimensions to use to encode said at least one second image sequence; and

30 a dimension-based encoder, coupled to said encoding dimension selector, for encoding the at least one second video image sequence into a plurality of bitstreams.

26. The apparatus of claim 25 wherein the dimensions are orthogonal.

35 27. The apparatus of claim 25 wherein the components comprise foreground, background, and moving objects.

28. The apparatus of claim 25 wherein the dimensions comprise resolution, frame rate, and color.

29. A system for generating and distributing deconstructed
5 video comprising:

a deconstructed video source for producing a plurality of bitstreams that represent a video sequence;

a communications network, coupled to said deconstructed video source, for propagating said plurality of bitstreams;

10 and

a plurality of network interface devices (NIDs), coupled to said network, for extracting a subset of the plurality of bitstreams and propagating said subset of bitstreams to a user device.

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30. The system of claim 29 further comprising transition nodes, coupled to said network, for extracting a subset of said plurality of bitstreams from said network and coupling the subset of bitstreams to a second network.

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31. The system of claim 30 further comprising NIDs coupled to said second network for extracting a further subset of the subset of bitstreams and coupling the further subset of bitstreams to a user device.

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32. A computer readable medium containing software that, when executed by one or more general purpose computers operating as network nodes, causes the computer or computers to perform a method comprising:

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selecting a plurality of dimensions, where each dimension represents a characteristic of a video image sequence; and

encoding each selected dimensions to form one or more bitstreams.

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33. The method of claim 32 wherein said encoding step comprises:

forming a base bitstream representing a first video image sequence having a first set of characteristics; and

forming at least one additional bitstream, where each bitstream represents a different dimension and when said

- 5 first bitstream and said at least one additional bitstream are combined to form a combined bitstream, the combined bit stream represents a reconstructed video image sequence having different characteristics than said first video image.

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34. The method of claim 32 wherein said one or more dimensions comprise specific image regions, frame rate, resolution, and color depth.

- 15 35. The method of claim 32 wherein the dimensions are arranged in a partial order, where each point in the partial order represents a valid combination of dimensions for encoding the video image sequence.

- 20 36. The method of claim 32 wherein said video image sequence is deconstructed into components prior to forming said at least one additional bitstream, where each component is encoded as at least one additional bitstream.

- 25 37. The method of claim 32 wherein each of said dimensions is orthogonal.

38. The method of claim 32 wherein said method is performed at the edge of a network.

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39. The method of claim 32 wherein said selecting step further comprises:

separating the video image sequence into a plurality of components, where each component has a common

- 35 characteristic; and

selecting a plurality of dimensions to encode each of components in the plurality of components, where each

dimension represents a characteristic of a video image sequence.

40. The method of claim 39 wherein, after encoding, each of
5 said components is represented by a base bitstream and at least one additional bitstream.

41. The method of claim 32 wherein said dimensions are
10 orthogonal.

42. The method of claim 32 wherein said selecting step is
performed at the edge of a network.

43. The method of claim 32 wherein said at least one
15 additional bitstream represents a dimension of said video sequence.

44. The method of claim 32 wherein said base bitstream
represents a video sequence having minimal quality.

45. The method of claim 44 wherein said at least one
20 additional bitstream, when combined with said base bitstream, represents a video sequence having a quality that is higher than said base bitstream.

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